THURSDAY, SEPTEMBER 11, 1879

## OUR NEW PROTECTORATE

*Our New Protectorate, Turkey in Asia; its Geography, Races, Resources, and Government.* By J. Carlile McCoan. 2 vols. (London: Chapman and Hall, 1879.)

*Narrative of a Journey through Khorassan and on the North-west Frontier of Afghanistan in* 1875. By Col. C. M. MacGregor, C.S.I. Bengal Staff Corps. 2 vols. (London: Allen and Co., 1879.)

WHATEVER other interests may have suffered through the late convulsions in the East, those of science, and especially of geography, have at all events been largely benefited. The cession of Cyprus to England and the Anglo-Turkish Convention, which brings a large part of Western Asia within the British political system, could not fail to direct general attention to those regions, thus giving occasion to a number of more or less comprehensive treatises on their physical conditions, natural resources, ethnical, social, and political relations. Of these works, those whose titles are here given, while differing widely in their scope and treatment, are each in its way very favourable specimens. Of the two, that of Mr. McCoan is perhaps on the whole the most satisfactory, as from its purpose and nature it is likely to prove of the greatest permanent interest. Within the compass of two moderately-sized octavo volumes it deals with an immense variety of topics. Yet such is its admirable arrangement, and so thoroughly master is the writer of his subject, that there is nowhere any crowding or confusion, and the result is a most convenient and reliable handbook of "Our New Protectorate." Nothing is omitted that comes fairly within the scope of such a treatise, and a twenty years' personal experience of an intelligent observer of men and things will be sufficient guarantee of the accuracy of his statements, if not always of the justness of his conclusions. In the first volume separate chapters are devoted to each of the five great divisions of Asiatic Turkey, whose orography, hydrography, climate, natural products, present economical conditions, trade routes, political divisions, are treated in detail. These are followed by more comprehensive chapters on the history, races, religions, resources, and government of this eastern section of the empire. The second volume is occupied chiefly with questions of an economical and social character—public works, public instruction, trade centres, agriculture, slavery, polygamy, the Ulema, the capitulations, abuses, necessary reforms.

The chapters on natural resources, products, and agriculture, convey a vivid picture of the inexhaustible latent wealth of these regions.

"On both sides of the Bosphorus Nature has fitted Turkey to be a great agricultural country, but in Asia the geological and climatic conditions of successful husbandry combine in a degree seldom equalled in Europe. Hence nearly every kind of agricultural produce known to commerce may be raised on a scale of abundance limited only by the labour and intelligence employed. The present condition of the country, it need hardly be said, supplies no measure of its full capabilities, but even as it is, the merest bird's-eye glance at its chief products, under all the existing disadvantages of gross fiscal abuses, the most primitive rudeness of culture, and the want of outlets for everything grown beyond the actual needs of local consumption, will show how rich and wide is the field awaiting only better government and a moderate infusion of western skill and capital to become again one of the most productive in the world" (vol. i. p. 203). Nothing, perhaps, gives a better idea of the immense variety of these products, than a glance at the export trade of Smyrna, including, as it does, such varied items as rice, maize, and other cereals, opium, tobacco, silk, and cocoons, valonea, madder, gall nuts, yellow berries, mohair, sponges, besides large quantities of dried figs and raisins of prime quality.

Yet, boundless as they are, these surface-products are represented as scarcely exceeding in importance the vast mineral treasures that lie still almost untouched in the bowels of the earth. "The soil of Anatolia, especially, is largely composed of those earlier rocks which are known to be the most rich in minerals, rocks, in fact, to which some of the most valuable of these are altogether confined. The country is said, indeed, to possess almost every sort of metal except platina. Not only, too, are most of the mineral districts near either the sea or navigable rivers, but—what is even of more importance—the metallic and carboniferous beds are found close to, or within practical distance of, each other. We have thus, in many instances, the proximity of coal and iron which has made the fortune of Staffordshire, and the absence of which in Spain has rendered the rich mines of the Asturias nearly valueless. According to the official records of the Porte, in all some 250 mines of various ores have been discovered throughout the Empire, three-fourths of which are in Asia. Most of these latter were formerly worked, but the great majority have been abandoned through want of capital or for other reasons, leaving only about thirty now at work, and not one of these to the full limit of its producing capacity" (vol. i. p. 209). Detailed accounts are given of some of the more valuable of these deposits, including the famous coal-fields of Erekli, which form part of the Sultan's private domain, but which are so badly worked as to be almost unremunerative.

The rival schemes of railway communication through Turkey with India are briefly but clearly explained, and their merits impartially balanced. In the large map of Turkey in Asia accompanying the work the several routes are laid down, together with the proposed extensions, and all the highways actually completed. In future editions this map might be advantageously supplemented by another, showing the administrative divisions, vilayets, sanjaks, kazas, which are so necessary to a full comprehension of Turkish geography, and which are yet so difficult to procure.

Col. MacGregor's work appears somewhat late in the field, but is none the less welcome as a valuable contribution to our knowledge of a region still but little known, notwithstanding its daily increasing political importance. It is somewhat of the nature of an itinerary, in which the towns, distances, elevations, water and mountain systems, and all other points of interest along the route traversed by the enterprising explorer are carefully described. From the title it might be supposed that the ground thus sur-

veyed was restricted to the province of Khorassan. But the whole of the Iranian table-land was actually crossed from Bushire, on the Persian Gulf, through Shiraz and Yezd, in a north-easterly direction, to the Afghan frontier. Here it was the traveller's intention to break fresh ground by penetrating from Herat along the Hari-rud valley, and through Bamian, direct to Kabul. But this scheme, which would have opened up an entirely new region, was thwarted at the outset by two insurmountable difficulties.

The immediate consequence was that instead of an able and much-needed work on the Perso-Afghan highlands, we have one limited mainly to the north-eastern districts of Persia. On this region much additional light is thrown, and an attempt is made to remove the obscurity still attaching to the water-system of the country between the Bakharz and Ghaïn ranges. "The drainage of the space between the northern face of the Doroh hills, the eastern slope of the Ghaïn range, and the southern side of the Khaf range, I believe to be as follows:—First, it does not enter the Hari-rud by the Karat-rud, cutting the Dushakh ridge, as is shown in our maps, nor does it drain to the Harût-rud, or to the Hari-rud direct. All the drainage of this space is absorbed into three great depressions, called 'daks,' that is, the drainage of Nibolûk, of Ghaïn, and of Khaf Païns, goes to the Dak-i-Diwalan; that of the Zirkoh tract, which includes all to the east of the Auguran range, including Gulwarden, Yezdun, and Kaland, drains into the Dak-i-Khurshab, close to the Koh Kabuda; while that of Fûrg, Daramian, Ahwaz, &c., drains to the Dak-i-Tundi, fifteen farsakhs from Ahwaz, and a portion from Mogulbackhe to Pahre runs direct into the Hari-rud. This may seem at first sight a rather startling statement, but it is not so in reality. In the first place, it must be remembered that the process of denudation of the surrounding hills, which is constantly going on, must have a tendency to create the low ridges which cause these depressions; and as there is not sufficient water to keep a way open for itself, and, moreover, the soil is salt, what there is is rapidly evaporated and sucked in, and it is easy to see how these drainage beds have lost the power of discharging themselves to what, no doubt, should be their proper exit, the Hari-rud" (vol. i. p. 204).

Elsewhere some useful information is given regarding the "kavirs," "rigs," "lûts," and "beyabûns," which occupy such a large portion of the Iranian tableland; but the existence is denied of one continuous "kavir" (salt desert) stretching from Kûm to Bejistûn, though "there are a great number of smaller kavirs due to local drainage"[1] (vol. ii. p. 138). A graphic description is given at p. 101, vol. i., of one of these dreary kavirs twelve miles long on the route between Kûr and Tabaz. "It is rather difficult to suggest anything that will give an English reader an idea of what this kavir is. It is not sand, nor is it in the least like the desolate plains of India, which, burnt up as they may be, are luxuriant in their vegetation compared with kavir. It has, speaking quite literally, not one blade of grass, nor one leaf of any kind, not a living thing of any sort. It is composed of dark soil, which looks as if it had been turned up by the plough a year before, but which is covered with a thick salt efflorescence, which glitters painfully to the eyes. All round, as far as the eye can reach, there is nothing to be seen but this glare of white, which seems to stare piteously on you as you pass by, crunching over its dry crust. Every here and there is a dark patch, which, on getting up to, you find to consist of moist earth which seems, as it were, to have sweated up from beneath. These patches also dry up, and then the salt shows. The surface of the kavir is not smooth, but is so honeycombed with small holes about nine inches deep and the size of a man's head, that it is very difficult walking for animals; but as the soil of the kavir binds very well, a good road could doubtless be made over it."

Altogether, what with kavirs, stony wastes, rough roads, brackish water, filthy serais with little accommodation beyond foul air and noxious vermin, it is not astonishing to learn that the writer did not find travelling in Persia much more pleasant than others have done before him, and it is depressing to hear that there is little prospect of any improvement in the future. "The worst of this country is that, bad as it is, one cannot conceive how it could be improved in any single way. There is no water, it produces absolutely nothing, and there is no possibility of water being collected for irrigation" (vol. i. p. 84). Worse still, the sands are in many places visibly gaining on the arable land, and even on the inclosed cities themselves. "The country is, in fact, in the process of changing from a series of rocky ridges to one of undulating sandy wastes. Yesterday's march showed the sand triumphant; to-day the rocks are still fighting on. This process of burying is most peculiar, and may be witnessed on a small scale in almost any village between this and Yezd. You see the sand blown against the wall, gradually getting higher and higher, till it blows over and then forms a mound in the field beyond, which gradually increases its height till all trace of wall and field is lost, and you have before you a sand-heap. I can quite believe now the stories of towns being buried, having myself seen the thing on a small scale" (vol. i. p. 147).

In the caravanserai of Bandar Gaz on the Caspian, acquaintance was made with what would appear to be "a new specimen," which may interest entomologists. "It had a head all made up of eyes, a body like an ordinary fly, and a tail like a gimlet. It never made any noise, and it always attacked to the rear, and once it had got its gimlet into you, it seemed to afford it such pleasure that it invariably parted with its life sooner than let go. But its effects were not realised till after death; then came on an itching pain that nearly drove one mad" (vol. ii. p. 166).

In case a second edition should be required of this work, attention may be directed to the peculiar spelling of proper names, with a view to introducing some kind of law and order where all is now sheer chaos. It would probably be too much to hope for a uniform adherence to some scientific or at least intelligent system of transliteration; but a moderate degree of consistency might at least be expected from a writer who has some knowledge of the Arabo-Persian writing system. But here we have neither consistency, nor uniformity, nor anything but the wildest confusion, and the accompanying map at

[1] Originally *kavir*, or rather *kabîr*, was an adjective, simply meaning *great*, the full expression being *Darya-i-kabîr*, "the great ocean," *i.e.*, of salt, and it may be added that, notwithstanding Col. MacGregor's view, the natives invariably apply this expression collectively to the whole of the vast region stretching from the Ghaïn highlands westwards to Yezd and Kashan. Further north this salt waste would seem to intersect the Ghaïn range west and east, here merging with the Khaf Desert, which joins the Dashti Na-ummed ("desert of despair") on the south, and the Ghorian wastes on the east.

variance with the text, the text with itself. Hence, to quote a few out of innumerable instances, such alternatives as Yezd and Yuzd, Dalaki and Dulukee, Mahamadan and Mahomedan, Geeach and Giach, Tabaz and Tubbuz, Ghain and Ghaeen. Then such old friends as Meshed, Bushire, Turcoman, Hari-rud, disguised as Mushud, Bushuhr, Turkmun, Hurri Rood, without any conceivable advantage. It may be stated that owing to these eccentricities the spelling in the passages here quoted has necessarily been reduced to system.

A. H. KEANE

## OUR BOOK SHELF

*Catechism of Agricultural Chemistry and Geology.* By the late J. F. W. Johnston. An Entirely New Edition, Revised and Enlarged by C. A. Cameron, M.D. Seventy-eighth Thousand. (Edinburgh and London: Blackwoods, 1879.)

THIS popular and useful little book has been decidedly improved by the additions and alterations which Dr. Cameron has made. Since the author's death, about a quarter of a century ago, this catechism had been once revised (in 1863) by Dr. Voelcker, but the time had long since arrived for further changes. If the present editor had been less scrupulous in adhering to the original form and substance of Prof. Johnston's work, this issue would have justly merited the description on the title-page of "An entirely new edition, revised and enlarged." There are, it is true, two fresh pages in the present edition, corresponding to a few new tables of the composition of cattle foods, but we fail to find the numberless small changes and additions which the progress of science demanded. Every sentence of the book should have been rigorously scrutinised and thoroughly amended, or even excised, where necessary. All expressions such as these: "Rancid butter is said to be sweetened" (p. 73), "It is said that if a cow be liberally supplied with whey" (p. 74), "The feeding with whey thickened with meal is said" (p. 74), should be removed. Statements of which the teacher is not sure should not find a place in an elementary catechism. Again, the table, on p. 34, of the ash-constituents removed from an acre by various crops needs emendation. On turning to page 53 we find two other tables showing the produce of corn and straw in certain field experiments with various manures. We do not think the omission of these tables would entail any loss, while their place might be profitably occupied by a series of conclusions deduced from the really satisfactory experiments on crops made at Rothamsted or at some of the continental agricultural stations. For, indeed, what lesson can be learnt from the statement (p. 53) that in an unnamed locality, on an undescribed soil, during a season of which the rainfall and temperature are unrecorded, and by the use of a wheat manure the composition of which is not furnished to the reader, 42 bushels of wheat were produced per acre? Without duplicates and without repetition in different localities and in different seasons, field-trials of manures are positively misleading. But when once such tables as those on pages 34 and 53 have got into a popular work and remained there fifteen years, they have a good chance of remaining fifty.

The statement on p. 67 that parsnips contain no starch will not stand, while we conclude that it was by some oversight that a tabular account of the constituents of various root-crops has been omitted by Dr. Cameron in re-casting and amplifying the data given by Dr. Voelcker in previous editions on page 65. We note here that question 363 on page 63 is repeated in question 374 on page 67, and that the statistics (p. 74) of cheese production in the United Kingdom are no longer correct.

## LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

[*The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.*]

### Palisa's Comet

I INCLOSE an ephemeris of the comet which was discovered at Pola by Herr Palisa on August 21, thinking that it may be of interest to some of your readers.

The ephemeris is calculated from observations made at my observatory on the nights of August 26, 27, and 28, by Dr. R. Copeland and Herr Lohse.

The comet is easily visible in a 4-inch telescope.

*Ephemeris of Palisa's Comet*

| Berlin midnight. | R.A. h. | m. | Decl. ° | ′ | Log. Δ. | Log. r. | Brightness. |
|---|---|---|---|---|---|---|---|
| Sept. 5 | 11 | 43·6 | +44 | 47·0 | 0·2219 | 0·0393 | |
| 6 | | 50·4 | 44 | 15·8 | ·2191 | ·0362 | 1·7 |
| 7 | 11 | 57·2 | 43 | 42·7 | ·2163 | ·0331 | |
| 8 | 12 | 3·9 | 43 | 7·8 | ·2137 | ·0301 | |
| 9 | | 10·6 | 42 | 31·1 | ·2112 | ·0272 | |
| 10 | | 17·3 | 41 | 52·5 | ·2088 | ·0243 | 1·8 |
| 11 | | 23·9 | 41 | 12·1 | ·2065 | ·0215 | |
| 12 | | 30·4 | 40 | 30·0 | ·2043 | ·0187 | |
| 13 | | 36·8 | 39 | 46·1 | ·2023 | ·0161 | |
| 14 | | 43·2 | 39 | 0·5 | ·2004 | ·0136 | 2·0 |
| 15 | | 49·5 | 38 | 13·3 | ·1987 | ·0111 | |
| 16 | 12 | 55·7 | 37 | 24·5 | ·1971 | ·0087 | |
| 17 | 13 | 1·8 | 36 | 34·2 | ·1957 | ·0064 | |
| 18 | | 7·8 | 35 | 42·4 | ·1945 | ·0042 | 2·1 |
| 19 | | 13·7 | 34 | 49·2 | ·1934 | ·0021 | |
| 20 | | 19·5 | 33 | 54·8 | ·1925 | 0·0001 | |
| 21 | | 25·2 | 32 | 59·2 | ·1917 | 9·9983 | |
| 22 | | 30·8 | 32 | 2·4 | ·1911 | ·9965 | 2·3 |
| 23 | | 36·3 | 31 | 4·6 | ·1907 | ·9948 | |
| 24 | | 41·7 | 30 | 5·8 | ·1905 | ·9932 | |
| 25 | | 47·0 | 29 | 6·2 | ·1904 | ·9919 | |
| 26 | | 52·2 | 28 | 5·7 | ·1906 | ·9906 | 2·3 |
| 27 | 13 | 57·3 | 27 | 4·7 | ·1909 | ·9895 | |
| 28 | 14 | 2·3 | 26 | 3·0 | ·1914 | ·9885 | |
| 29 | | 7·1 | 25 | 0·8 | ·1920 | ·9877 | |
| 30 | 14 | 11·9 | +23 | 58·2 | 0·1928 | 9·9869 | 2·3 |

47, Brook Street, September 5 LINDSAY

### Insect Swarms

IT may be worth mentioning in connection with Mr. J. Clarke Hawkshaw's interesting account of the wonderful insect-swarm at Trouville, on August 12 and 13, that the two species which composed it were noticed in immense profusion about the same time in the West of England.

On the 13th ult. (which was one of the very few summer days of the season) I was driving with a friend from Exmouth to Budleigh-Salterton, on the South Devon coast, when our attention was attracted by the enormous multitude of insects (moths and butterflies) which were fluttering over the flowery margin of the road. The butterfly was at once recognised as the "Painted Lady;" the moth was not determined, but from its general appearance, its companionship, and all the circumstances of the case, I have no doubt that it was the *Plusia gamma*. The swarm attended us, with little variation in the numbers, throughout almost the whole of our journey (a distance of five miles), and on reaching Budleigh we found *V. cardui* clustering thickly on the flowers in the brilliant little gardens facing the sea.

Along the road the moth was in the greatest profusion, the numbers being frequently so great as to form a perfect *cloud*.

The effect of the quick, restless, irregular movements of the great host, stretching on mile after mile, was very curious. The butterflies were, of course, less plentiful, but still their numbers must have been immense. They seemed to be finely coloured and in very perfect condition.

The direction in which the swarm was travelling was not specially noted; indeed if food was the object sought it might